Sandia National Laboratories

PROPOSAL FOR ADMINISTRATIVE NO FURTHER ACTION ENVIRONMENTAL RESTORATION SITE 41, BUILDING 838 MERCURY SPILL (TA-I) OPERABLE UNIT 1302

August 1994

Environmental
Restoration
Project

United States Department of Energy
Albuquerque Operations Office

PROPOSAL FOR ADMINISTRATIVE NO FURTHER ACTION

SITE 41, Building 838 Mercury Release
OU 1302

SANDIA NATIONAL LABORATORIES/NEW MEXICO

1.0 INTRODUCTION

Sandia National Laboratories/New Mexico (SNL/NM) is proposing an administrative No Further Action (NFA) decision for Environmental Restoration (ER) Site 41, Building 838 Mercury Release, Operable Unit (OU) 1302.

In 1976, a D-cell sized mercury battery stored outside Building 838 allegedly released a small amount of mercury to the surrounding soil. The layout of the release site has changed due to renovations and construction. Surface soil samples to six inches below ground surface (BGS) were collected. Sampling results indicated that mercury was not detected (IT 1994). Because there is no potential for a release that poses a threat to human health or the environment, this site is being proposed for an NFA determination.

2.0 HISTORY OF UNIT

ER Site 41 is located south of Building 838, near the intersection of "H" Street and 7th Street in the northwest quadrant of Technical Area (TA)-I (Attachment 1;Figure 5.6-1). Building 838 is an 11,514-square-foot structure built in 1946, and has been occupied continuously since construction. From the early 1950s to 1980, the SNL/NM Nuclear Safeguards and Security Division occupied the building. In 1980, SNL/NM Safety Engineering took occupancy and remained in the building until it was vacated in October 1993. The building was used for office space and for small-scale electronic activities, including instrument repair and construction and testing of electronic components.

SNL/NM personnel working in Departments 1710 (Transportation Protection Department) and 1712 (Advanced Systems Development) used mercury batteries as power sources for their instrumentation. These batteries were reported to be approximately the size of a D-cell (SNL/NM 1993; Budlong and Guzman 1976), but no further description of the batteries, such as the composition of the powder and the amount of mercury contained, could be obtained.

On August 26, 1976, while equipment was being tested on the south side of Building 838 (exact location is unknown), one of the mercury batteries exploded (Budlong and Guzman 1976). The battery "powder was apparently thrown out" (Budlong and Guzman 1976). Presumably, the powder was cleaned up and disposed according to SNL/NM routine practices at that time, although these practices were not defined in written procedures. Due to this reported release, the site was designated as an SNL/NM ER Site during the Comprehensive Environmental Assessment Response Program (CEARP) Phase 1 investigation (DOE 1987).

During the background investigation for the Resource Conservation and Recovery Act (RCRA) Facilities Assessment Work Plan, present and former employees who may have occupied this and adjacent buildings at the time of the reported explosion, as well as people who may have worked with mercury batteries or in the same SNL/NM organization at the time, were interviewed in an effort to gain additional information about this incident. Despite diligent efforts to locate and contact key players, only twelve people were found. Of these, only two knew anything about the mercury batteries being used, these two people had no recollection of the explosion event (SNL/NM 1993c).

The location of the release site is obscured by renovation and construction that has occurred since 1976. The south side of Building 838 was regraded in 1984, and the building exterior currently consists of landscape gravel, concrete sidewalks, and paved parking.

3.0 EVALUATION OF RELEVANT EVIDENCE

The SNL/NM Assessment, Decontamination and Demolition Team conducted a contamination assessment of Building 838 in order to be able to remove the building. Because of the location of ER Site 41 immediately south of Building 838, it was necessary to investigate potential mercury contamination in the soils of this area (IT 1993). The soils investigation included collecting surface soils (0 to 6 inches BGS) at six locations south of the building (Attachment 2; Figure 5.6-2). The sampling locations were evenly spaced on a line approximately 10 feet south of the building and were analyzed for mercury using EPA Method 7470 with a detection limit of 100 ppm (IT 1994). Additional sampling was conducted in May 1994. Samples were collected 5 feet south of the first six locations (Attachment 2; Figure 5.6-2) at slightly greater depths (2 to 2.5 feet BGS). These samples also were analyzed for mercury using EPA Method 7470. All twelve samples had nondetectable concentrations of mercury (IT in preparation).

4.0 CONCLUSION

In 1976, a mercury battery stored outside Building 838 reportedly exploded and released mercury to the surrounding soil (Site 41). It was not known whether contamination from this incident was cleaned up or whether measurable quantities remained in the area (DOE 1987). Based on the best available information concerning the location of the reported release, twelve soil samples were collected and analyzed with no mercury being detected. Due to the extremely small quantity of mercury suspected to have been released, and due to the subsequent disturbance of soils through construction activities, further sampling would not be productive. Because this site does not have the potential for releasing hazardous waste (including hazardous constituents) which may pose a threat to human health or the environment, an NFA determination is requested.

5.0 REFERENCES

Budlong, J. and J. Guzman. 1976. Memorandum to Blake, V. "Unusual Occurrence Report Regarding a Mercury Battery Explosion Outside Building 838." August 27, 1976.

International Technology (IT), 1993. "Site-Specific Sampling and Analysis Plan for Contamination Assessment of Buildings 838 and 839." December 1993.

International Technology (IT), 1994. "Contamination Assessment Report for Buildings 838 and 839." February 1994.

International Technology (IT), In Preparation. "Contamination Assessment Report for Buildings 838 and 839: Addendum."

SNL/NM 1993c--TA-I interview report.

U.S. Department of Energy (DOE 1987). "Draft Comprehensive Environmental Assessment and Response Program (CEARP), Phase 1: Installation Assessment." September 1987.

6.0 LIST OF ATTACHMENTS

Attachment 1
Figure 5.6-1 - Location of ER Site 41: Building 838 Mercury Release

Attachment 2
Figure 5.6-2 - ER Site 30, Approximate Location of Soil Samples Collected in Previous Investigations

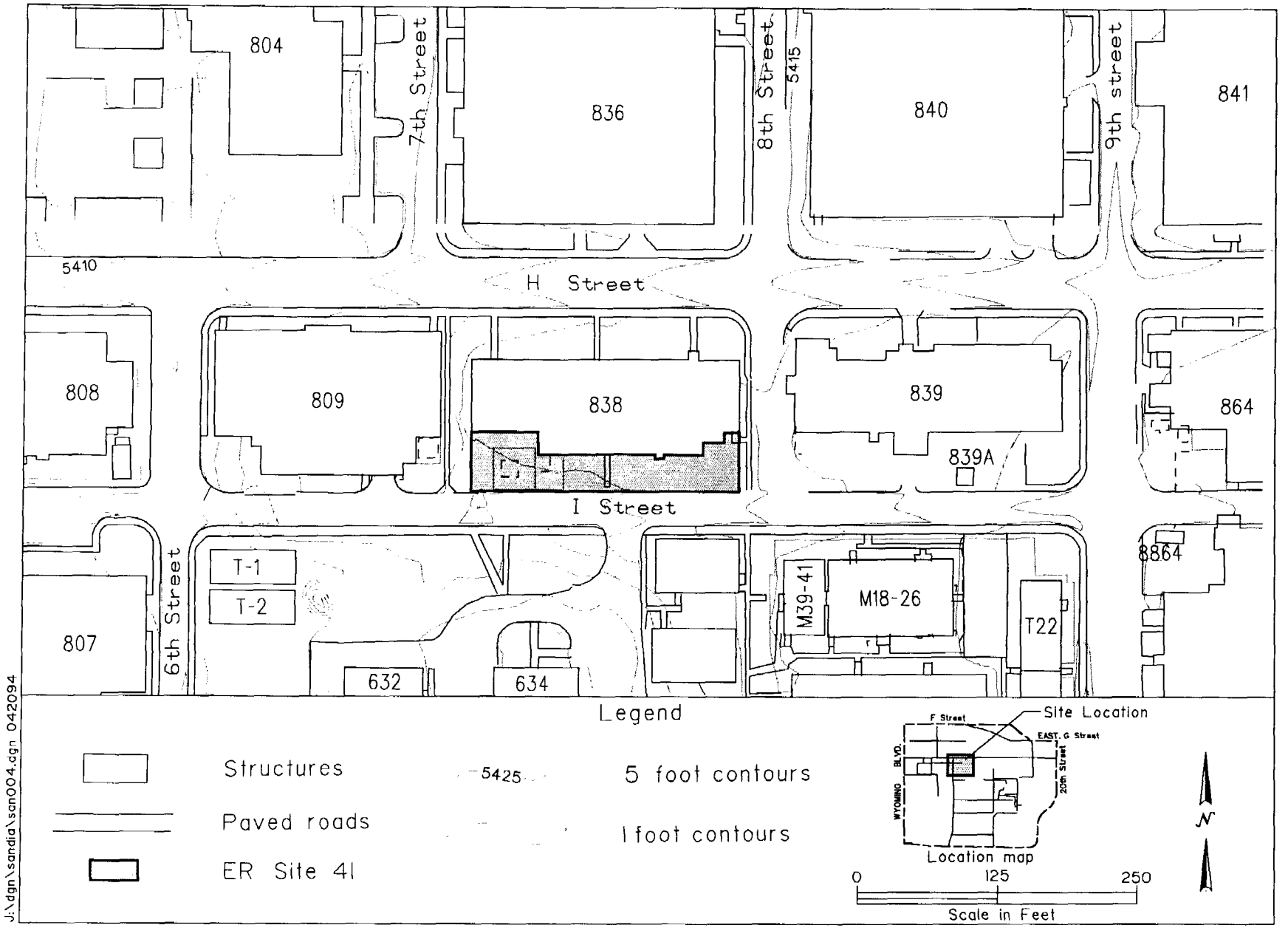

Figure 5.6-1
Location of ER Site 41: Building 838 Mercury Release.

Attachment 1

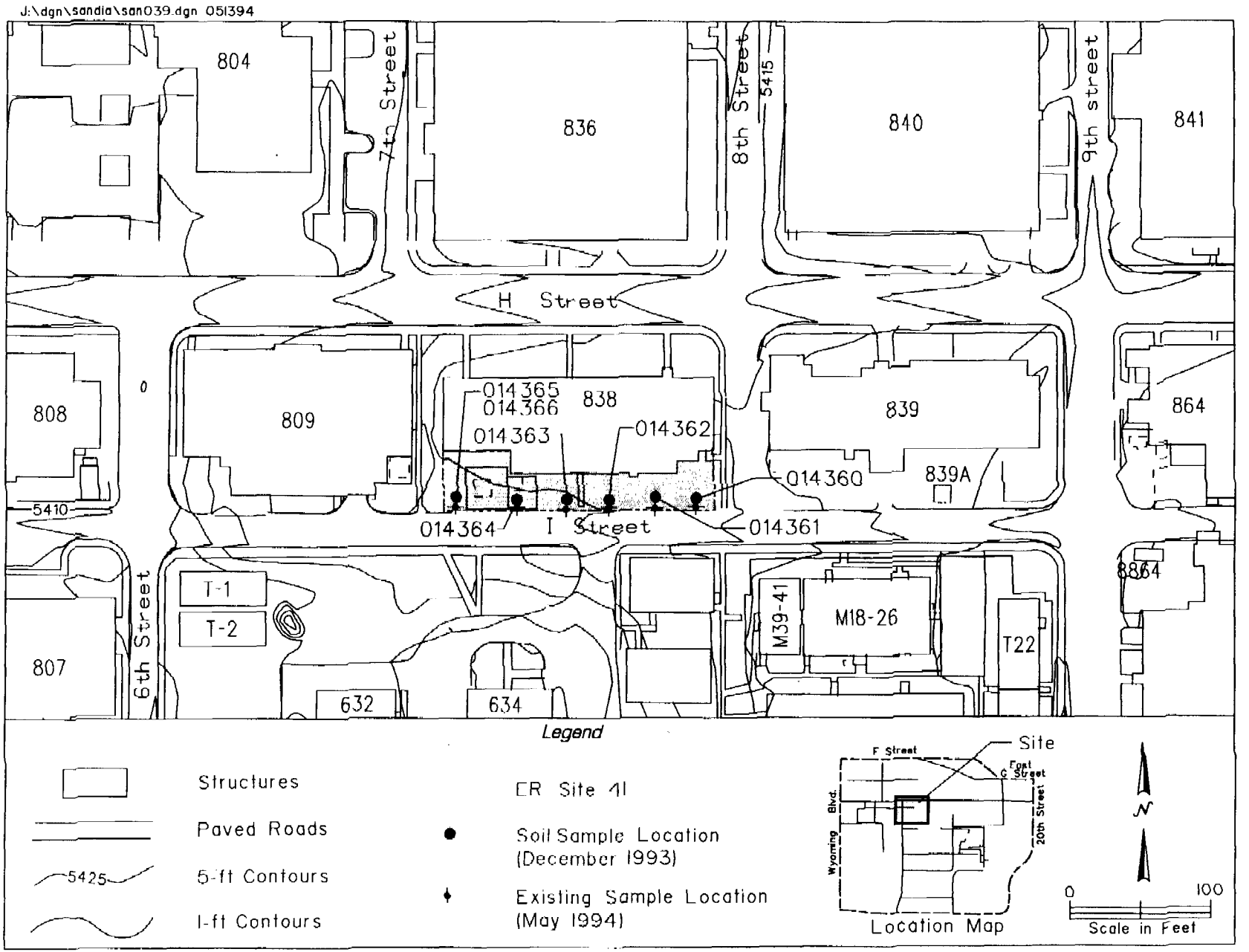

Figure 5.6–2
ER Site 41, Approximate Location of Soil Samples Collected in Previous Investigations

Attachment 2